

RECEIVED
N.C. Dept. NRCD

SEP 07 1990

Winston-Salem
Regional Office

THIS DOCUMENT PREPARED FOR:

MR. DWIGHT CARGILE
HEAD CONTRACTING OFFICER
ENVIRONMENTAL CONTRACTS BRANCH
FACILITIES ENGINEERING COMMAND
2155 EAGLE DRIVE
P. O. BOX 10068
CHARLESTON, SOUTH CAROLINA 29411-0068

REGARDING:

UST REMOVAL
PROJECT NO. USN900617
CONTRACT NO. N62467-90-M-0657
7838 MC CLOUD ROAD
GREENSBORO, NC 27409-9634

PREPARED BY:

KRIS BANCROFT, RPG PE CHMM
GEO SERVICES
P. O. BOX 444
HIXSON, TENNESSEE 37343

PHONE: (615) 877-8301

SUMMARY OF UST SYSTEM EXTRACTION

INTRODUCTION:

GEO Services was called to the location of the United States Armed Forces Reserve Training Center, which is located at 7838 McCloud Road, Greensboro, Guilford County, North Carolina, to assess the feasibility of removing two (2) each five thousand gallon (5,000) capacity, underground storage tanks (USTs), and ancillary equipment. At that time, a contract proposal was submitted and executed by the Naval Facilities Engineering Command, and an Application for Permanent Closure of Underground Storage Tank Systems, (accompanied by a Site Sketch of the facility), was completed by GEO Services. That application was submitted to the State's regulatory authority, The State of North Carolina, Department of Natural Resources and Community Development, 8025 North Point Boulevard, Suite 100, Winston-Salem, North Carolina 27106-3295.

The application for UST removal was reviewed by Mr. Steve Kay, Environmental Engineer I, DEHNR, and approved on 12 July 1990, by Mr. Andrew Raring, Hydrological Regional Supervisor.

This activity was accomplished during the time period 15-17 August 1990.

The techniques and procedures implemented in the completion of this task either meet or exceed current regulations and standardized practices defined by the NAVFAC Specification No. 06-90-0657, US EPA, the State of North Carolina, API, NEPA, NIOSH, OSHA, ASTM, and NCEP.

SITE FEATURES & LOCATION:

Numerous sketches depicting the subject Site are included in Appendix A of this report, and should be referenced for the purpose of clarification.

The Armed Forces Reserve Training Center is located on the North side of McCloud Road, in the City of Greensboro, North Carolina. The property in the area is zoned "Commercial," with the nearest residential properties approximately two-and-one-quarter (2.25) miles from the facility.

The subject Site is located on high, well-drained terrain, which slopes approximately 6° downward toward the Northeast.

The soil composition in the excavations conducted to facilitate the physical extraction of the USTs are described in detail in the "STRATIGRAPHIC TABLE" located in Appendix B of this report. These evaluations are consistent with soil sample analyses made previously at the subject Site.

There are no known drinking water wells (the area residents are supplied by public utilities), or dairies in the area.

FUEL FACILITY DESCRIPTION:

Numerous sketches depicting the subject Site are included in Appendix A of this report, and should be referenced for the purpose of clarification.

The UST designated as GSO 2 was installed to supply unleaded gasoline to military vehicles operated by the USMC Reserve unit, housed at this location.

This facility was installed under turf, immediately West of the vehicle hostelry compound. The linear centerline of the UST was oriented in a North-South direction, parallel to the nearest segment of chainlink fence surrounding the compound.

The physical dimensions of GSO 2 were 8'-0" in diameter by 13'-5" in length. The fill neck and suction/extraction assembly pipes were each 5'-0" in length--the tops of which were approximately 4" above grade. The lateral run of the vent line was approximately 22', surfacing just Eastward of the fence line. The vertical standard of the vent line was clamped to a fence post. The product line was approximately 45' in length. All piping was constructed from galvanized steel tubing. A check valve was installed at the junction of the suction/extraction assembly. The product line was drained prior to its removal and the effluent (approximately 6 ounces), was added to the flammable waste drum operated by the facility. The facility dispensed fuel through a suction pump dispenser.

The UST designated as GSO 3 was installed to supply unleaded gasoline to military vehicles operated by the US Army Reserve unit, housed at this location.

This facility was installed under turf, North of the Northeast corner of the Vehicle Maintenance Building. The

USN900617NCG

linear centerline of the UST was oriented in an East-West direction, parallel to the span of the North wall of said building.

The physical dimensions of GSO 3 were 8'-1" in diameter by 13'-5" in length. The fill neck and suction/extraction assembly pipes were each 3'-0" in length--the tops of which were approximately 3" above grade. The lateral run of the vent line was approximately 16', surfacing just Northward of the North wall of said building. The vertical standard of the vent line was clamped to the North wall of said building, and cleared the roof by more than three (3) feet. The product line (laid out in an "L" shaped configuration, was approximately 56' in length. All piping was constructed from galvanized steel tubing. A check valve was installed at the junction of the suction/extraction assembly. There was no fluid in the product line. The facility was designed to dispense fuel through a suction pump dispenser.

Both GSO 2 and GSO 3 still bore the manufacturers coating and show no signs of deterioration. All piping showed no signs of corrosion.

UST REMOVAL:

Upon arrival of personnel from GEO Services, the electrical service to the UST system was neutralized and removed. The dispensers serving this system were removed. The USTs had been hydrated and pumped to within one inch of the bottom.

On 15 August 1990, activity to remove the aforementioned USTs was commenced. The extraction was effected in accordance with NAVFAC Specificatolon 06-90-0657, the US EPA and the State of North Carolina regulations, as well as API, NFPA, NIOSH, OSHA, NCEP, and ASTM standardized practices and guidelines.

Insertion of a paste-coated probe indicated that the UST contents consisted of water and miniscule amounts (less than one sixteenth (0.0625) inches) of petroleum (gasoline.)

Excavation to expose the top of the USTs was effected. At that time it was discovered that the true composition of the USTs was steel rather than fiberglass. Navy personnel were notified and called to witness this development.

The soil extracted from the GSO 2 excavation was piled immediately to the North and East side of the pit. The vent

line was removed. The dispenser line was disconnected at a union, and the fluids contained therein were caught in a receptacle and then transferred to a flammable waste drum operated by the facility. The dispenser line was disconnected. The vent lines were plugged, the fill necks were capped with vented plugs (.125 inch diameter drilled holes), and a plastic bag was tied and taped over the neck of the product line couplings.

The USTs were scraped free of dirt and the project number was spray-painted on two sides, using high-visibility enamel.

The USTs were inerted by Nationwide Tank and Environmental Services, Incorporated, and were extracted and transported to an open area at the facility until such a time as they were loaded aboard a flat bed trailer for transfer to a facility controlled by Nationwide. The area where the USTs were placed is under lockable fence and not in the immediate proximity of normal traffic or dwellings of any order.

The USTs showed no signs of corrosion and still bore the manufacturers coating. All piping appeared to be integrous in that there was no evidence of pipe joint compound compromise, or corrosion.

The UST pit contained no groundwater or seepages.

SOIL SAMPLING PROCEDURES:

One (1) each soil sample was retrieved from each end of the UST pits. A freshly cleaned hand corer was used to collect the soil samples. The samples were retrieved from points approximately two feet below the bottoms of each UST. In the excavation accomplished to extract GSO 2, a sample was taken from both the South and North ends of the pit. In the excavation accomplished to extract GSO 3, a sample was taken from both the West and the East ends of the pit. A total of four (4) samples were taken.

These representative soil samples were divided approximately in half, with one portion from each sampling point placed in sterile glass jars with non-reactive (teflon-lined) lids, and stored on ice until they were received by Technical Laboratories, Incorporated, of Chattanooga, Tennessee. A chain of custody letter is provided in Appendix C of this report. The balance of each sample was placed in sterile headspace jars, tightly capped with a foil membranes.

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Personnel retrieving samples wore new, disposable gloves for each retrieval. Sampling equipment was vigorously scrubbed in petroleum emulsifier (Sparkleen), and strong detergent after each use.

The samples which were placed in the sterile glass jars with non-reactive lids were transported to a State-approved laboratory and analyzed for pH values and fuel hydrocarbon content.

The headspace samples were placed in an environment with ambient temperature above 70° F for a minimum of one half hour and were then field tested with a calibrated H-Nu meter. The H-Nu meter gave no indication of the presence of volatile organic materials.

The UST pit was filled with clean soil, eighteen pounds of grass seed and two bails of wheat straw were spread on the surface of the excavation.

ANALYTICAL METHODS:

The California GC Method with SW-846 Method 5030 (purge and trap), as sample preparation was used. The determinants are expressed as Total Petroleum Fuel Hydrocarbons in parts per million (ppm).

ANALYTICAL RESULTS:

On 29 August 1990, results of soil analyses were related to GEO Services. At that time, GEO Services called and advised personnel at the facility and at the Naval Facilities Engineering Command of the analytical results of the soil samples retrieved from the bottoms of the UST pits. Reports of the analytical results are found in Appendix C of this report and are given below.

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Soil tests increments are expressed in parts per million (ppm) of total petroleum fuel hydrocarbons (TPFH). Two of the samples (one from each UST pit), were analyzed for pH values.

| Sample Location | TPFH | pH |
|-----------------|------|-----|
| USN900617NCG1 | | |
| GSO 2-1 | | |
| South | <1.0 | 5.1 |
| USN900617NCG2 | | |
| GSO 2-2 | | |
| North | <1.0 | |
| USN900617NCG3 | | |
| GSO 3-1 | | |
| West | <1.0 | 6.9 |
| USN900617NCG4 | | |
| GSO 3-2 | | |
| East | <1.0 | |

SUMMARY OF FINDINGS:

The following summary provides an overview of the findings of this investigation and is based on the data and methods explained in this report. This summary should not be separated from the overall report.

The data collected and the analyses performed indicate:

TPFH LEVELS

For all samples, the TPFH levels are recorded at <1.0 ppm. These values are below the reaction levels established by the US EPA and the State of North Carolina.

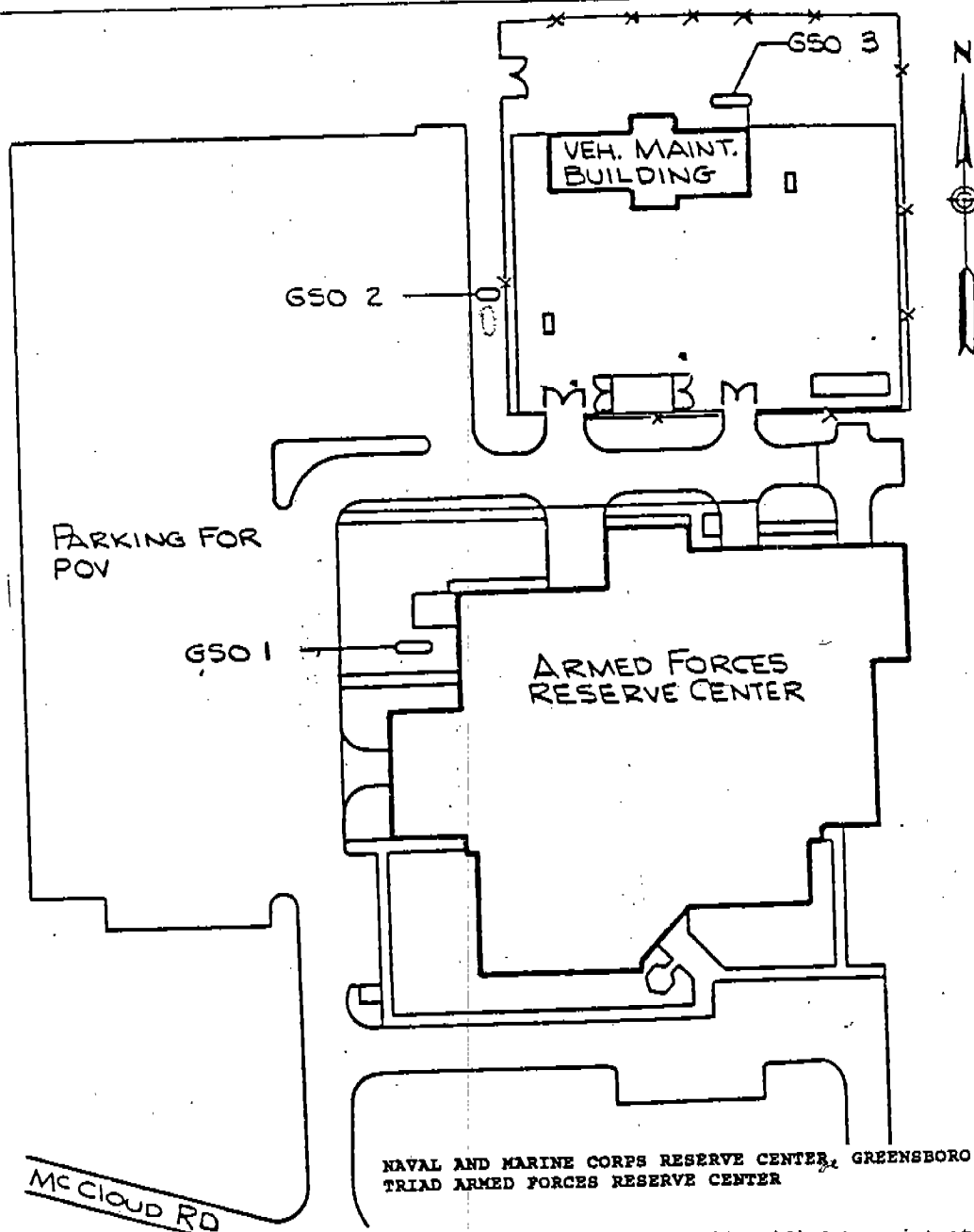
USN900617NCG

CONCLUSION:

From the evidence retrieved during the UST closure activity, it appears this facility has had no significant impact on the environment of the area, it is therefore recommended that a letter requesting final approval for this closure, along with a copy of this report be forwarded to:

Mr. Andrew Raring, Hydrological Regional Supervisor
State of North Carolina
Department of Natural Resources & Community Development
8025 North Point Boulevard
Suite 100
Winston-Salem, North Carolina 27106-3295

APPENDIX A



NAVAL AND MARINE CORPS RESERVE CENTER, GREENSBORO, NORTH CAROLINA
TRIAD ARMED FORCES RESERVE CENTER

Tanks GS-02 and GS-03 were identified to exist at this facility. Tank GS-02 is located west of the vehicle maintenance building and north of the main reserve building. Tank GS-03 is located north of the vehicle maintenance building. These tanks were installed in 1978 when the activity was constructed. Tanks GS-02 and GS-03 are both each 5,000 gallon fiberglass underground storage tanks. Tank GS-02 was previously used to store gasoline for use by the Marine Corps unit stationed at NMCRC Greensboro, and GS-03 was previously intended to store diesel for use by the U.S. Army unit stationed at NMCRC Greensboro. Tanks GS-02 and GS-03 are out-of-service, but have not been abandoned or removed properly in accordance with 40 CFR 280. The use of GS-02 was discontinued in early 1988, and tank GS-03 has never been used. The contents of both tanks have been removed, and there are no plans to place the tanks back into service.

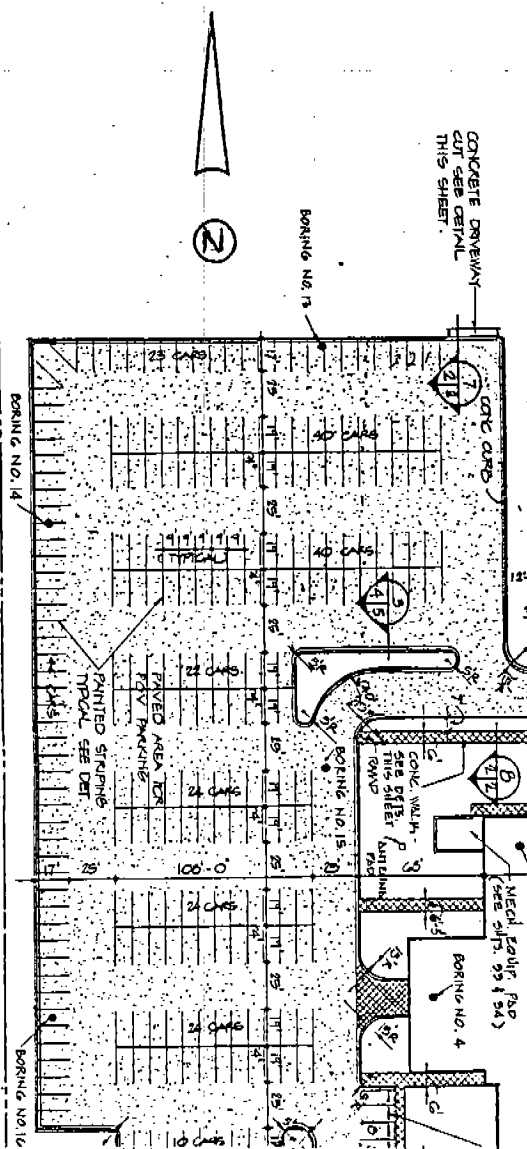
DEPARTMENT OF THE NAVY

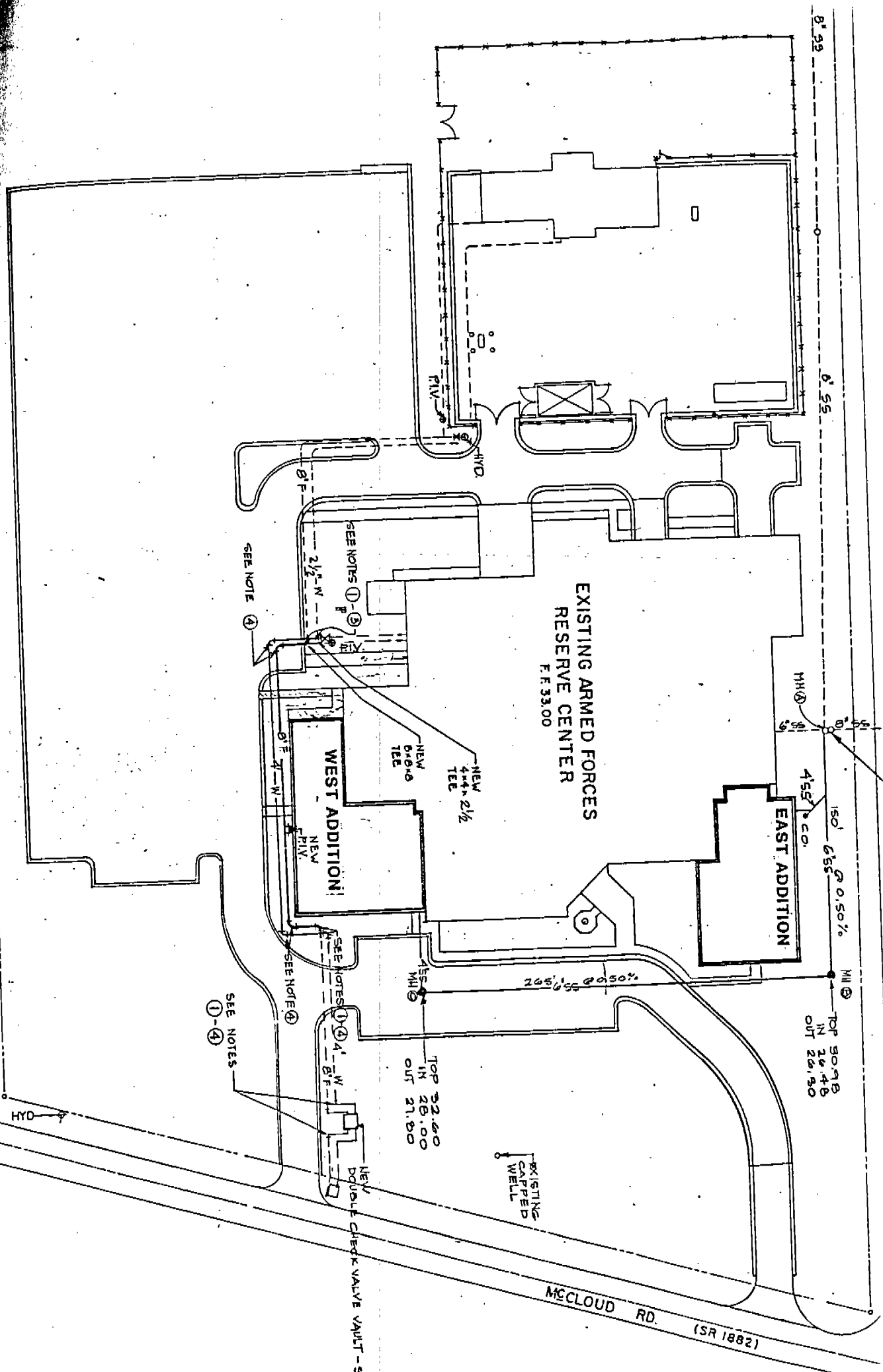
NAVAL FACILITIES ENGINEERING COMMAND
SOUTHERN DIVISION - Charleston, S.C.

Prepared by S.O. SANBORN
Reviewed by _____
Date 15 FEBRUARY 1990
Spec. No. NONE

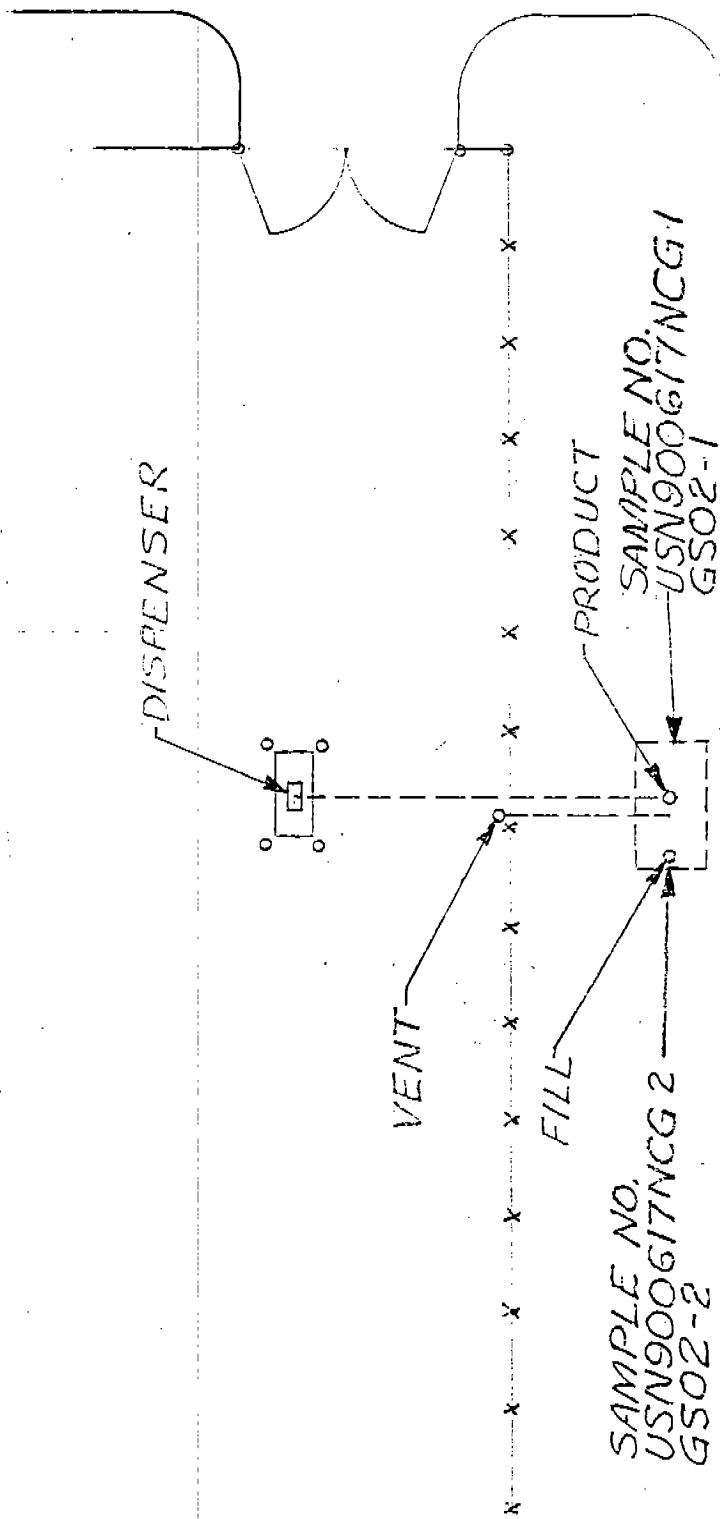
REMOVE UNDERGROUND STORAGE TANK AT
NAVAL AND MARINE CORPS RESERVE CENTER,
GREENSBORO, NORTH CAROLINA

Addendum/Amendment No. _____
Contract No. Sketch No. A
N62467-90-C-0657

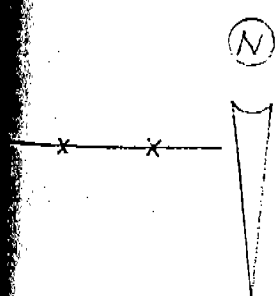




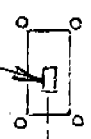
McCLOUD RD. (SR 1882)



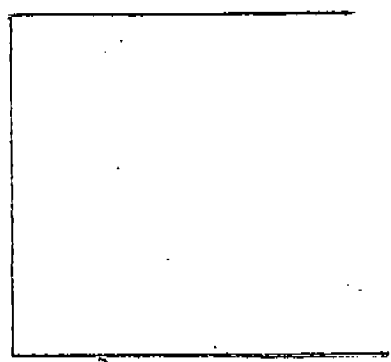
UST G502
5,000 GAL. STEEL



DISPENSER



VENT



VEHICLE
MAINTENANCE
BUILDING

SAMPLE NO.
USN900617NCG4
GSO3-2

PRODUCT

FILL

SAMPLE NO.
USN900617NCG3
GSO3-1

UST GSO3
5,000 GAL. STEEL

APPENDIX B

STRATIGRAPHIC TABLE:

Excavation for GSO 2

| Depth in Ft. | Composition |
|--------------|--|
| 0.0--1.3 | Sand, tan, fine, silty, root material included. |
| 1.3--5.5 | Sand, red, fine-medium, silty/clayey, very stiff. |
| 5.5--10.5 | Sand, red, fine, silty/micaceous, moderately firm. |
| 10.5-15.0 | Sand, yellow-orange w/ grey streaks, fine-coarse, well consolidated in situ. |

Excavation for GSO 3

| | |
|-----------|---|
| 0.0--3.5 | Sand, red, fine-coarse, silty/clayey, stiff. |
| 3.5--5.8 | Sand, red, fine-coarse, silty, moderately stiff. |
| 5.8--11.4 | Sand, red, fine-medium, silty/clayey, stiff, w/ white, fine-grained sandstone boulders admixed. |
| 11.4-13.3 | Sand, yellow-grey, fine-coarse, well-consolidated in situ. |

APPENDIX C

TECHNICAL LABORATORIES, INC.

515 CHEROKEE BLVD.

CHATTANOOGA, TENNESSEE 37405

615/265-4533

MARTIN H. DAVIS
President

COUNT NO.

2813-001

DATE AUGUST 29, 1990

RECEIVED FROM

GEO SERVICES, P. O. BOX 444, HIXSON, TENNESSEE 37343
MR. KRIS BANCROFT

RECEIVED DATE

08/20/90

MATERIAL

SOIL

MARKED

U.S. NAVY & MARINE RESERVE, GS02, USN900617NCG-1, SOUTH END OF
PIT, 08/17/90, 0940

LABORATORY NO.

303,300

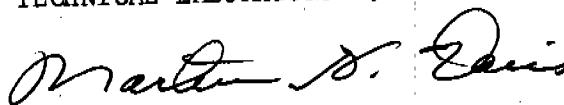
pH

5.1

Total Petroleum Fuel Hydrocarbons
(Low to Medium Boiling Point)

<1 ppm

TECHNICAL LABORATORIES, INC.



MARTIN H. DAVIS
President

ibc

TECHNICAL LABORATORIES, INC.

515 CHEROKEE BLVD.

CHATTANOOGA, TENNESSEE 37405

615/265-4533

MARTIN H. DAVIS
President

COUNT NO. 2813-001 DATE AUGUST 29, 1990

RECEIVED FROM GEO SERVICES, P. O. BOX 444, HIXSON, TENNESSEE 37343
MR. KRIS BANCROFT

RECEIVED DATE 08/20/90

MATERIAL SOIL

MARKED U.S. NAVY & MARINE RESERVE, GSO2, USN900617NCG-2, NORTH END OF
PIT, 08/17/90, 0945

LABORATORY NO. 303,301

Total Petroleum Fuel Hydrocarbons
(Low to Medium Boiling Point)

<1 ppm

TECHNICAL LABORATORIES, INC.



MARTIN H. DAVIS
President

ibc

TECHNICAL LABORATORIES, INC.

515 CHEROKEE BLVD.

CHATTANOOGA, TENNESSEE 37405

615/265-4533

MARTIN H. DAVIS
President

ACCOUNT NO. 2813-001

DATE AUGUST 29, 1990

RECEIVED FROM GEO SERVICES, P. O. BOX 444, HIXSON, TENNESSEE 37343
MR. KRIS BANCROFT

RECEIVED DATE 08/20/90

MATERIAL SOIL

MARKED U.S. NAVY & MARINE RESERVE, GSO3, USN900617NCG-3, WEST END OF PIT,
08/17/90, 1210

LABORATORY NO. 303,302

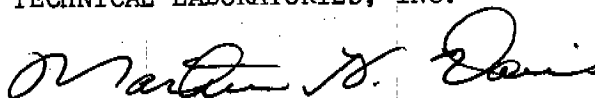
pH

6.9

Total Petroleum Fuel Hydrocarbons
(Low to Medium Boiling Point)

<1 ppm

TECHNICAL LABORATORIES, INC.



MARTIN H. DAVIS
President

ibc

TECHNICAL LABORATORIES, INC.

MARTIN H. DAVIS
President

515 CHEROKEE BLVD.
CHATTANOOGA, TENNESSEE 37405

615/265-4533

ACCOUNT NO. 2813-001 DATE AUGUST 29, 1990
RECEIVED FROM GEO SERVICES, P. O. BOX 444, HIXSON, TENNESSEE 37343
MR. KRIS BANCROFT
RECEIVED DATE 08/20/90
MATERIAL SOIL
MARKED U.S. NAVY & MARINE RESERVE, GS03, USN900617NCG-4, EAST END OF PIT,
08/17/90, 1235
LABORATORY NO. 303,303

Total Petroleum Fuel Hydrocarbons
(Low to Medium Boiling Point)

<1 ppm

TECHNICAL LABORATORIES, INC.



MARTIN H. DAVIS
President

ibc

It is the intent of the tank(s) owner, to Permanently Close the tank(s) listed below in the manner indicated. ✓
All tanks will be empty and clean, free of all liquids and sludges as required in 40 CFR, Part 280.71 [b].

NOTIFICATION OF TANK CLOSURE

RECEIVED
N.C. Dept. NRCD

JUL 6 1990

| OWNERSHIP OF TANK(S) | LOCATION OF TANK(S) | Winston-Salem Regional Office |
|-------------------------------------|--|----------------------------------|
| Name: <u>U.S. NAVY</u> | Site Name: <u>NAVAL & MARINE CORPS RSV CTR</u> | |
| Address: <u>7838 MC CLOUD RD</u> | Address: <u>MC CLOUD RD # 7838</u> | |
| <u>GREENSBORO NC 27409-9634</u> | <u>GREENSBORO NC</u> | |
| Phone Number: <u>(919) 668 0053</u> | County: _____ | |

| TANKS FOR CLOSURE | | | |
|-------------------|-------------------|--------------------------|---------------------------------|
| TANK NUMBER | TANK CAPACITY | LAST CONTENTS | CLOSURE METHOD |
| Tank 1 | <u>5,000 Gal.</u> | <u>Unleaded Gasoline</u> | To Be Removed ✓ To Be Filled |
| Tank 2 | <u>5,000 Gal.</u> | <u>NEVER USED</u> | To Be Removed ✓ To Be Filled |
| Tank 3 | _____ | _____ | To Be Removed To Be Filled |
| Tank 4 | _____ | _____ | To Be Removed To Be Filled |
| Tank 5 | _____ | _____ | To Be Removed To Be Filled |

| TANK(S) CLOSURE OPERATIONS TO BE PERFORMED BY: | |
|--|--|
| (Contractor) Name: <u>GEO Services</u> | |
| Address: <u>P.O. Box 444</u> <u>Hixson</u> State <u>TN</u> Zip <u>37343</u> | |
| Contact: <u>Kris Bancroft</u> <u>RPG PE</u> Phone: <u>(615) 877 8301</u> | |
| <u>Yes</u> Is this operator knowledgeable of the requirements for the removal/filling of underground storage tanks ? | |
| <u>Yes</u> Is this operator and employees medically monitored as required by OSHA 29 CFR, Part 1910.120 [f] ? | |
| <u>Yes</u> Is this operator and employees specifically trained as required by OSHA 29 CFR, Part 1910.120 [e] ? | |

| TANK(S) CLOSURE ASSESSMENT TO BE PERFORMED BY: | |
|--|--|
| (Contractor) Name: <u>GEO Services</u> | |
| Address: <u>P.O. Box 444</u> <u>Hixson</u> State <u>TN</u> Zip <u>37343</u> | |
| Contact: _____ Phone: _____ | |
| <u>Yes</u> Is this operator knowledgeable of requirements for the closure assessment in 40 CFR, Part 280.72 ? | |
| <u>Yes</u> Is this operator and employees medically monitored as required by OSHA 29 CFR, Part 1910.120 [f] ? | |
| <u>Yes</u> Is this operator and employees specifically trained as required by OSHA 29 CFR, Part 1910.120 [e] ? | |

| NOTIFICATION SUBMITTAL / NOTIFICATION DATE | |
|--|---|
| Name: <u>Kris Bancroft</u> | Scheduled Removal Date: <u>8/15 & 16/90</u> |
| Signature: <u>Kris Bancroft</u> | Date Submitted: <u>7/3/90</u> |

Tank owners are required to notify the implementing state agency at least 30 days before a Permanent Tank Closure as required in 40 CFR, Part 280.71 [a]. For further information contact the U. S. Environmental Protection Agency RCRA / Superfund Hotline at 800-424-9346

AUTHORIZATION OF REPORT

This is a confidential report, solely for the use of the United States Navy (herein referred to as the "Client.") This report should not be released or disclosed to any other party without the prior written consent of GEO Services.

The synopsis of the survey performed for the Client at their Greensboro, North Carolina, facility (herein referred to as the "Site"), is enclosed in the body of this report. The survey, and all related work performed by GEO Services does not represent, warrant, certify, or imply that (i) all the hazardous or toxic materials on the Site, above or below ground, at the time the survey was performed are qualified or quantified herein; (ii) that any local, state, or federal regulations appertaining to the environment have not been violated in such a manner as to incumber the Client with legal penalties, civil suit, or criminal liabilities; (iii) that environmental management at the Site will not be the subject of future investigations by local, state, or federal environmental authorities.

This report describes conditions observed at the Site on 15-17 August 1990. GEO Services did not perform systematic monitoring. The decision not to perform systematic monitoring does not constitute a representation, warranty, or opinion that situations technically significant (or significant under environmental regulations), should not be undertaken. Observations reported relate solely to the information available on the day(s) the Site was observed and to information made available by the regulatory authorities. GEO Services does not give any opinion or information pertaining to the condition of the Site prior to or subsequent to the date of this report. This is a limited and qualified opinion of GEO Services, and the statements or descriptions given in this report are for informational purposes only, and are not made or given as warranty. No representations pertaining to the Site are made except those contained in this report. This report shall not constitute an agreement to indemnify or insure against any liability or expense whatsoever.



Kris Bancroft, RPG PE CHMM
GEO Services
P.O. Box 444
Hixson, Tennessee 37343

(615) 877-8201